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The Influence of Social Media on Environmental Advocacy and Climate Change Communication

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ABSTRACT

Social media platforms are now a potent means of communication to promote environmental causes and raise awareness. The present paper aims to discuss the Influence of Social Media on Environmental Advocacy and Climate Change Communication in Punjab, Pakistan. The approach taken was a quantitative research design, a survey method for collecting primary data from social media users. The data collection process was carried out by using an online survey on Google Forms platforms through various social media groups. SPSS-23 was used to analyze 250 valid responses. In this paper, descriptive statistics, reliability tests, correlation analysis, and regression analysis were used to analyze the relationships among social media use, environmental advocacy, climate change awareness, and climate change communication. The findings demonstrate how social media can be used to create environmental awareness and to communicate climate change messages. There were significant and positive relationships between the use of social media and environmental advocacy, climate change awareness, and public involvement in environmental campaigns. Also, regression analysis shows that social media campaigns have a very strong effect on environmental advocacy and climate change communication among users. The findings indicate that social media was a valuable tool to convey environmental awareness, get the public involved, and promote climate-related conversations in the Punjab, Pakistan. The results of this study are very valuable for policy makers, environmental action groups, and communication professionals when planning their social media campaign for environmental advocacy and climate change education.

Introduction

Climate change is one of the biggest challenges of the 21st century affecting ecosystems, economic systems and human societies across the globe. Due to the increase in the need for effective communication and advocacy efforts in the context of environmental preservation and climate change mitigation, an increase in global temperatures, unpredictable weather, loss of biodiversity, and environmental degradation have intensified the need. Informed citizens are more likely to adopt sustainable practices and support environmental policies, therefore public awareness and participation is a key element in tackling these environmental challenges (Peiró-Signes et al., 2025).

Social media has revolutionized the dissemination, creation and consumption of information in recent years. "Social media platforms like Facebook, X (Twitter), Instagram and YouTube have emerged as effective communication devices that allow people, organisations and activists to disseminate information, create communities, and draw attention to social and environmental movements" (Ali et al., 2025). Social media enables two-way communication, information dissemination at speed and instant connectivity worldwide, vastly improving the reach and impact of environmental advocacy campaigns, compared to traditional media (Turay et al., 2026).

Social media platforms are now being used by environmental organizations, activists, and government agencies to promote awareness and advocacy for climate change and environmental sustainability. Social media is used to share information about the environment and engage the public in actions to stop climate change by using hashtags, online campaigns, storytelling, and community engagement. Digital platforms have the potential to mobilise mass audiences and influence the global environmental debate, as illustrated by the #FridaysForFuture and #ClimateStrike movements (Segerberg & Magnani, 2025).

Social media plays a growing role in influencing people's beliefs and discourse on the environment in developing countries such as Pakistan. As people have increased access to internet and Smartphone they have developed social media networks which are now accessible modes of communication to millions of people. In the Punjab province, which is the most populous province in Pakistan, social media groups and online communities are a common way to disseminate information about environmental protection, climate change awareness and sustainable practices. These platforms allow citizens to discuss environmental issues, support environmental movements and get involved in collective efforts to combat climate change (Abubakar et al., 2025).

While the increasing influence of social media in environmental communication has been talked about in literature, empirical studies related to the effectiveness of social media in the promotion of environmental advocacy and climate change awareness in a Pakistani context are still few. To develop effective communication strategies for environmental sustainability, it is important to understand how social media affects public consciousness and how it can be used for advocacy. In addition, the impact of social media campaigns can be measured to gain insights into the potential of digital platforms to shape the discourse and public engagement around the environment (Dubey et al., 2025).

Hence, this study aims to explore how social media can affect the communication about climate change in the context of environmental advocacy in Punjab, Pakistan. The data were gathered from the members of the social media groups through a survey method, Google Forms. The Statistical Package for the Social Sciences (SPSS) was used to analyse the 250 responses. The results give empirical evidence that social media campaigns can be effective and can create awareness among the users of social media about environmental concerns and can stimulate discussion on climate change in Punjab.

This paper adds to the ever increasing body of literature on digital environmental communication, focusing on how social media can be used to promote environmental advocacy in developing nations. The results can be used to inform policy makers, environmental groups and communication practitioners in creating a more effective social media campaign to raise environmental awareness and motivate environmental action about climate change (Chen, 2026).

Research Objectives

This paper emphasized the effects of social media in environmental advocacy and climate change communication in the context of Punjab, Pakistan. In particular, the study set out to accomplish the following aims:

- To investigate the role of social media to educate social media users of Pakistan (Punjab) about environmental protection.
- To investigate how effective social media is with raising awareness of climate change issues.
- To study the impact of social media campaigns to raise awareness of the public on environmental protection activities.
- To understand the relationship between social media use and communicating about climate change among social media users.
- To assess the effectiveness of social media campaigns in raising awareness and sustainable behaviour about the environment.

Research Questions

To ensure that the objectives of the research are achieved, the following research questions are answered:

RQ1: How social media contributes to environmental advocacy amongst Punjab users in Pakistan?

RQ2: What are the roles of social media platforms in raising awareness about climate change issues?

RQ3: What are the effectiveness of social media campaigns for engaging and encouraging the public to participate in environmental activities?

RQ4: Do their social media users have a strong relationship between social media use and climate change communication?

RQ5: What do people think about the effectiveness of environmental campaigns that are carried out in social media?

Research Hypotheses

Given these research goals and literature review on social media and environmental communication, the following hypotheses were formulated to examine the relationships between social media usage, environmental advocacy and climate change communication. These hypotheses were tested with the SPSS program:

H1: There is significant positive relationship between the use of social media and environmental advocacy among social media users of Punjab in Pakistan.

The social media users' awareness about climate change issues is highly elevated due to their exposure to social media.

H3: Social media campaigns are one of the most important ways to promote active public engagement in environmental protection campaigns.

H4: The users' relationship with climate change communication and social media use are significant.

H5: People believe social media campaigns are effective to promote environmental awareness and sustainable practices.

Literature Review

As the climate emergency, along with other environmental topics, has become more pressing, there is a greater requirement for effective communication strategies to be able to raise awareness and pursue environmental advocacy (Turay et al., 2026). Social media has emerged as a powerful communication platform, facilitating the swift transmission of information, engagement with the public, and mobilization efforts regarding environmental matters (Dubey et al., 2025). Recent studies have been conducted on social media in climate change awareness and advocacy and environmental communication.

Social media networks have revolutionized the way in which communication happens, offering interactive and participative information sharing (Loupessis & Intahchomphoo, 2025). In contrast to conventional media, social media offers an opportunity for more active participation in conversations, sharing of information, and engaging with environmental campaigns in real time (Ali et al., 2025). Anderson (2017) recommends that SNS can play a significant role in influencing the climate change perception of society by offering information and linkages between various audiences. They allow environmental groups, activists, and researchers to share climate-specific data in an effective and widespread manner (Yan & Schäfer, 2025).

The same applies to Olausson (2018), who states that digital communication platforms play a pivotal role in today's environmental discourse because they have the potential for engaging public participation and participatory communication. Social media is a way of bringing people closer to the environment and creates a network of climate activists and environmentally conscious citizens beyond geographical limitations (Feng et al., 2026).

The awareness of the hazards of climate change and environmental sustainability is one of the most important roles performed by social media. Climate change communication may often be based on complicated scientific information that is hard to grasp by the general public. To simplify and spread this information, the role of social media platforms, such as images, short videos, and interactive posts (Huang et al., 2025) has been a great help. According to Williams, McMurray, Kurz, and Lambert (2015), social media has elevated the space awareness around climate change and has made information about climate change more accessible and engaging.

A recent study suggests that climate-related information on social media platforms leads to the growth of knowledge about environmental issues and drives pro-environmental attitudes (Peiró-Signes et al., 2025). Newman, Nisbet, and Nisbet (2018) discovered that users of social media who regularly engage with information on climate change are more likely to be environmentally conscious and worried about climate change. These platforms can therefore be useful in raising awareness about environmental problems (Liu & Wu, 2025).

Social media has also enabled the emergence of new types of environmental activism and advocacy (Mehra et al., 2025). With digital activism, people and organisations can create campaigns, advocate for the environment, and rally support. Online petitions, hashtag activism, and awareness campaigns have become popular tools for environmental organizations to drive

climate action. This is referred to as "connective action" in the words of Segerberg and Bennett (2011), who explain that people join social movements via online rather than offline networks.

Social media has the capacity for mass mobilization and network formation of climate activism around the globe, as seen in Fridays for Future (Smith et al., 2025). The authors Theocharis, Lowe, Van Deth & García-Albacete (2015) argue that social media platforms can be used to coordinate demonstrations, to make known environmental issues, and to motivate the public to take part in environmental actions.

Social media campaigns can change public attitudes and behaviours towards the environment beyond raising awareness. Studies show that exposure to environmental messages on social media promotes pro-environmental practices such as recycling, reducing plastic consumption, and supporting environmental policies. According to Boulianne, Lalancette & Ilkiw (2020), the discussion and civic engagement with political and environmental issues through social media can be facilitated by political and civic engagement. Political and environmental engagement through social media can be facilitated by discussion and civic engagement, according to Boulianne, Lalancette & Ilkiw (2020).

Additionally, online social media campaigns may involve visual storytelling and emotive language to affect the audience. Social media can play a role in combating misinformation and disseminating accurate climate science information, a critical component of informing environmental decisions (Nylund et al., 2025; Neureiter et al., 2026), according to Vraga & Bode (2017).

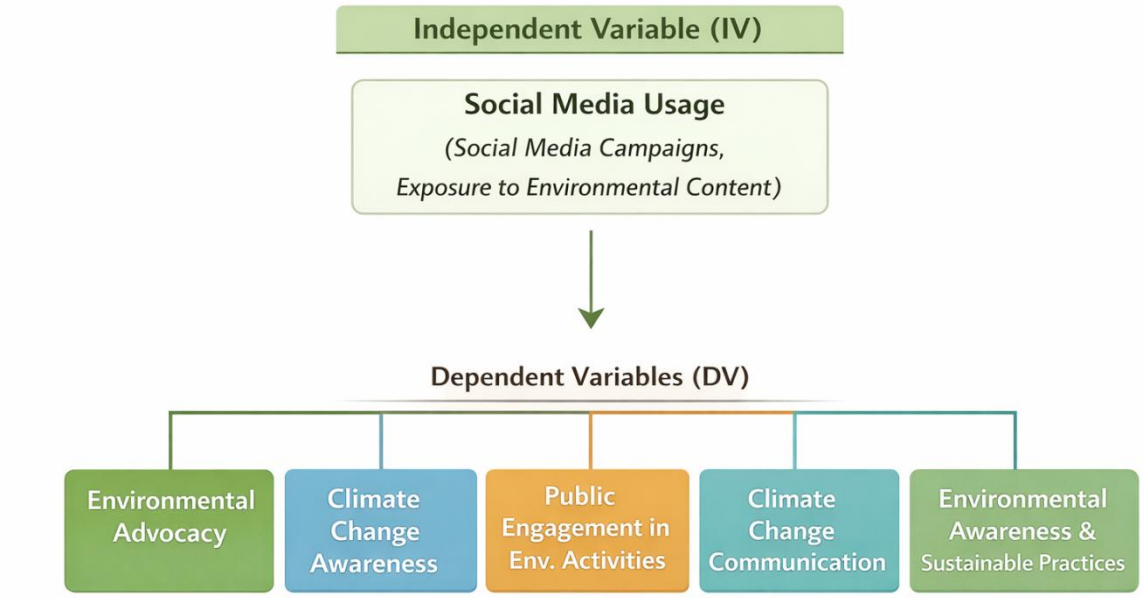
Even though the literature on the impact of social media on environmental activism in developed countries is abundant, the literature on developing countries is scarce. In nations where environmental problems are a serious concern, including air contamination, deforestation, and water scarcity, social media has come to be a crucial means of raising environmental awareness. As internet connectivity and the use of smartphones grow, social media provides opportunities for addressing environmental issues and promoting sustainability in an accessible manner (Logemann et al., 2025).

Social media groups and online communities in Pakistan are also a good source of information about protecting the environment and climate change awareness, especially in the province of Punjab. These platforms enable citizens to debate the environment, share information about environmental activities, and help create momentum for climate action. However, few empirical studies have been conducted to examine the effectiveness of such social media campaigns (Spampatti et al., 2025).

Research Gap

Although social media has been used in various studies to raise awareness about climate change, little research has been conducted on the effectiveness of using social media for climate change awareness in Pakistan. The literature available in the area has examined social media's role in environmental issues in rich countries or global environmental movements, and there is little knowledge regarding the role of social media in environmental issues in developing context. To address this gap and explore the role of social media in the environmental activism and communication of climate change in Punjab, Pakistan, this study was carried out.

Conceptual Model of the Study



(Fig. 1)

The conceptual framework shows that the use of social media is the independent variable, i.e. the primary factor that it is assumed to affect other results in the research. Social media use, in this instance, entails exposure to social media campaigns and environmental content, and so when individuals engage regularly with online environmental communication, post, video or advocacy campaigns, it is possible that exposure could influence their knowledge, attitudes and behaviour. The downward arrow indicates that there is a direct relationship between the independent variable and dependent variables which are the particular effects one is measuring.

These dependent variables are environmental advocacy, or the degree to which individuals support and promote the environmental causes; climate change awareness, or the degree to which individuals know the issues of climate change; public participation in the environmental activities, or the degree to which people participate in the activities such as clean-up drives, planting of trees, or awareness campaigns; climate change communication, or the degree to which individuals discuss and share information related to climate change with others; and environmental awareness and sustainable practices, which is the degree to which people are concerned about the environment and adopt responsible practices such as recycling, conserving water, or limiting the use On the whole, the framework implies that greater utilization of social media in the context of environmental concerns can have a beneficial impact on the awareness of people, communication, participation, and advocacy of climate and environmental sustainability.

Methodology

The present study was quantitative in nature to find out the role of social media in environmental advocacy and communication of climate change in Punjab, Pakistan. Primary data was collected through survey research design and was collected from the social media users. A survey-based design and data-driven design were found to be suitable in recent studies on environmental communication (Dasandi et al., 2025, Peiró-Signes et al., 2025), which explained that both designs were effective in studying the impact of digital media exposure on the levels of awareness, public perception, and involvement in environmental issues. Furthermore, previous studies suggest that social media is now one of the most significant arenas in which environmental discourses are

generated, circulated and co-understood by users and thus is highly relevant for empirical study (Loupessis & Intahchomphoo, 2025).

Population of the Study

The study population included social media users from Punjab, Pakistan, who were members of social media groups/communities related to environmental awareness, climate change and public interest issues. The participants were recruited using the social networking platforms including Facebook and WhatsApp and other social networking sites on which environmental information, advocacy messages and campaign content are used for sharing. This population choice is supported by recent findings that social media environments affects public engagement with climate-related news and environmental advertising (Dasandi et al., 2025; Storani et al., 2025).

Sample Size and Sampling Technique.

Participants in this study were chosen through the non-probability convenience sampling method. The questionnaire was also administered in social media groups and people could respond out of their own choice and availability. We were able to get 250 valid responses that were used in the final analysis. It was deemed suitable to study the proposed relationships between the study variables by this sample especially following current studies that have also applied survey based responses to the active media users to study environmental awareness, exposure to social media, and perceptions about climate (Peiró-Signes et al., 2025).

Data Collection Method

Data used in this study were obtained by the use of a structured online questionnaire which was created on Google Forms. The questionnaire link was distributed in various social media groups in Punjab, Pakistan and the respondents were requested to complete the questionnaire at their own will. Applying an online questionnaire was deemed appropriate due to the fact that the participants of the research were active social media users, and prior studies have also utilized digitally distributed questionnaires to determine the effect of media exposure on environmental knowledge, concern, and participation (Dasandi et al., 2025; Peiró-Signes et al., 2025).

Instrument of the Study

There were two prominent sections of the questionnaire. The introductory part collected demographic data, such as age of respondents, gender, and level of education and their usage of social media. The second part was dedicated to the research variables, such as social media usage, environmental advocacy, climate change awareness, involvement of people in the environmental activities, and the use of social media campaigns and their effectiveness. The respondents were requested to respond to each statement according to the level of their agreement with the statement with the help of a five-point Likert scale, where 1 = Strongly Disagree, and 5 = Strongly Agree. This framework was aimed at embracing the opinions of respondents regarding the impact of digital communication on awareness, advocacy, and environmental action, which is consistent with the dimensions highlighted in the recent climate communication studies (Dasandi et al., 2025; Loupessis & Intahchompoo, 2025).

Measurement of Variables

The measurement of the one independent variable, which was social media usage and campaign exposure, and several dependent variables, which included environmental advocacy, climate change awareness, involvement of people in environmental activities, climate change communication, and environmental awareness and sustainable practices, were taken into consideration in the study. The measures of these variables were conducted using several

questionnaire items based on the literature on social media engagement and environmental communication, in general. These assumptions are supported by the recent studies demonstrating that the exposure to pro-environmental social media content can influence environmental knowledge, responsibility, and sustainable behaviour, and climate discourse on the digital platform also influences the way users think about and react to environmental problems (Loupessis & Intahchomphoo, 2025; Peirou et al., 2025).

Data Analysis Techniques

The data gathered were investigated in Statistical Package of the Social Sciences (SPSS). To accomplish the objectives of the study, the use of several statistical methods was made. To summarize the demographic profile of respondents and their responses in general, the descriptive statistics of frequencies, percentages, means, and standard deviations were employed. Second, Cronbach Alpha was used to determine reliability analysis to determine the internal consistency of the measurement scales. Third, Pearson correlation analysis was employed in testing the relationships between social media use and the dependent variables which are environmental advocacy, climate change awareness, and communication. Lastly, the regression analysis was used to calculate the degree to which social media can have an impact on the environmental advocacy and climate change communication. These research methods are aligned with the existing empirical research on media exposure, citizen interests, and attitude to climate in the framework of digital communication (Dasandi et al., 2025; Peiró-Signes et al., 2025).

Ethical Considerations

Special attention to ethical issues was paid in the course of research. The study was fully voluntary and the respondents were made aware of the objective of the study prior to filling the questionnaire. The participants remained anonymous and their data was confidential and no personal data were collected. In addition, the data acquired was only used academically. The importance of these ethical principles is particularly high in the research with the focus on the online communication, the discourse with the audience, and the participation in social media where the problems of responsible data use and informed involvement are the center of the modern research practice (Storani et al., 2025).

Results And Data Analysis

The data collected from 250 respondents were analyzed using the Statistical Package for the Social Sciences (SPSS). This section presents the results of the statistical analyses, including descriptive statistics, reliability analysis, correlation analysis, and regression analysis to test the research hypotheses.

Demographic Characteristics of Respondents

Table 1: Demographic Profile of Respondents (N = 250)

Variable	Category	Frequency	Percentage (%)
Gender	Male	138	55.2
	Female	112	44.8
Age	18–25 years	92	36.8
	26–35 years	88	35.2
	36–45 years	46	18.4
	46+ years	24	9.6
Education	Undergraduate	95	38.0
	Graduate	104	41.6

	Postgraduate	51	20.4
Social Media Usage	Less than 1 hour	32	12.8
	1–3 hours	104	41.6
	3–5 hours	78	31.2
	More than 5 hours	36	14.4

The demographical information reveals that the study involved quite an equal representation of participants of both genders, 138 males (55.2) and 112 female (44.8). Regarding age, the highest number of respondents was in the 18-25 years of age category with 92 respondents (36.8%) and the 26-35 years category with 88 respondents (35.2). It shows that most of the respondents were young adults with a smaller number of respondents being of the older age groups (3645 years and 46 years and above respectively). In terms of educational level, majority of the respondents were reasonably educated with highest percentage of graduates (41.6%) followed by undergraduates (38.0%) and postgraduates (20.4%). It also indicates that the social media usage was quite high in the participants. Many of the respondents also indicated that they spent 1-3 hours on social media on a day to day basis (41.6%), and a third (31.2%) spent 3-5 hours. Smaller percentages said that they used social media less than 1 hour (12.8) or over 5 hours (14.4). In general, the table shows that the sample population used in the study was predominantly made up of young, educated and active social media users, which is suitable to analyze the role of social media in environmental advocacy and communication on climate change.

Reliability Analysis

Reliability analysis was conducted to determine the internal consistency of the measurement items using **Cronbach's Alpha**.

Table 2: Reliability Analysis

Variable	Number of Items	Cronbach's Alpha
Social Media Usage	5	0.82
Environmental Advocacy	5	0.85
Climate Change Awareness	5	0.87
Environmental Campaign Effectiveness	5	0.83
Climate Change Communication	5	0.86
Overall Scale	25	**0.88**

The results of the reliability analysis presented in the table show that all the variables of the study show a good level of internal consistency. The results of the Cronbach's Alpha values for the individual constructs are all above the widely accepted threshold of 0.70, indicating that the measurement scales employed in this study show reliability. Specifically, Social Media Usage (alpha = 0.82), Environmental Advocacy (alpha = 0.85), Climate Change Awareness (alpha = 0.87), Environmental Campaign Effectiveness (alpha = 0.83), and Climate Change Communication (alpha = 0.86) are all found to have good reliability. Among these, Climate Change Awareness has the most reliable structure, which suggests that the items of this structure are especially reliable. Furthermore, the overall scale, containing 25 items, possesses a Cronbach's Alpha value of .88, which is an excellent overall reliability value. These results verify that the items within the questionnaire are well-constructed and consistently measuring the variables that they are designed to measure; this makes the data ready for further statistical analysis.

Descriptive Statistics

Table 3: Descriptive Statistics of Key Variables

Variable	Mean	Standard Deviation
Social Media Usage	3.91	0.71
Environmental Advocacy	4.05	0.65
Climate Change Awareness	4.12	0.60
Environmental Campaign Effectiveness	3.98	0.67
Climate Change Communication	4.08	0.63

The descriptive statistics presented in the table revealed the generally positive perceptions of the respondents to all the major study variables, as all the mean values are recorded above the midpoint of the scale. Among the variables, Climate Change Awareness had the highest mean score (M=4.12,SD=0.60) indicating that the respondents had a high level of awareness towards climate change issues. This was followed by, Climate Change Communication (M = 4.08, SD = 0.63) and Environmental Advocacy (M = 4.05, SD = 0.65); thus, participants also had positive attitudes towards environmental advocacy efforts and for communicating climate related information. Similarly, the mean score of Environmental Campaign Effectiveness was 3.98 (SD = 0.67), however on a generally positive light for the effectiveness of environmental campaigns on social media. Social Media Usage had a mean of 3.91 (SD = 0.71), which while slightly lower than the other variables, still signals a fairly high level of engagement with social media among the respondents. The standard deviation values of all variables are low to moderate indicating that responses were fairly consistent and there was no wide variation in people's opinions. Overall, the results suggest that the respondents were active social media users and had positive attitudes on the issues of environmental advocacy, climate change awareness, and communication, which are supportive of the relevance of social media in environmental issues promotion.

Correlation Analysis

Pearson correlation analysis was conducted to examine the relationships between the study variables.

Table 4: Correlation Matrix

Variables	1	2	3	4	5
1. Social Media Usage	1				
2. Environmental Advocacy	.61**	1			
3. Climate Change Awareness	.64**	.58**	1		
4. Campaign Effectiveness	.59**	.62**	.60**	1	
5. Climate Change Communication	.67**	.63**	.65**	.61**	1

Note:$p < .01$

The correlation analysis has shown all the variables in the study are positively and significantly correlated with each other. Social Media Usage has a strong positive relationship with Environmental Advocacy (r = .61), Climate Change Awareness (r = .64), Campaign Effectiveness (r = .59) and Climate Change Communication (r = .67). This means that increased usage of social media is correlated with increased levels of environmental advocacy, increased awareness of climate change, positive views of campaign efficacy, and effective climate change communication. Among these relationships, there is the highest correlation between Social Media Usage and

Climate Change Communication (r = .67), indicating that social media is potentially especially important in spreading climate-related information.

The table also displays significant positive relationships between the dependent variables themselves. Environmental Advocacy is positively correlated with Climate Change Awareness (r=.58), Campaign Effectiveness (r=.62) and Climate Change Communication(r=.63). Likewise, Climate Change Awareness is positively related to Campaign Effectiveness (r = .60), as well as Climate Change Communication (r = .65). In addition, Campaign Effectiveness is positively related to Climate Change Communication (r=.61). Since all of the correlation coefficients are moderate to strong and are stated with double asterisks, they are statistically significant relationships between the variables. Overall, these results indicate that social media use is strongly associated with higher levels of environmental advocacy and higher levels of awareness of climate change and better communication of climate change, thus supporting proposed relationships in this study.

Regression Analysis

Regression analysis was conducted to examine the influence of social media usage on environmental advocacy and climate change communication.

Table 5: Regression Results

Variable	Beta (β)	t-value	Significance (p)
Social Media Usage → Environmental Advocacy	0.52	8.21	.000
Social Media Usage → Climate Change Awareness	0.55	8.73	.000
Social Media Usage → Campaign Effectiveness	0.49	7.65	.000
Social Media Usage → Climate Change Communication	0.58	9.02	.000

The results of the regression analysis show that social media usage has a significant influence with a positive value on all the major dependent variables in the study. The results show that social media usage has a significant prediction of Environmental Advocacy (v = 0.52, t = 8.21, p = .000) indicating that social media usage contributes to a higher level of environmental advocacy among the respondents. Similarly, social media usage has a significant positive impact on Climate Change Awareness (Beta = 0.55, t = 8.73, p = .000) which indicates that the more you use social media, the more aware you are of the climate change issues.

The results also show that the usage of social media has an important effect on Campaign Effectiveness (beta = 0.49, t = 7.65, p = .000) and Climate Change Communication (beta = 0.58, t = 9.02, p = .000). Among all the relationships, the strongest effect is observed for Climate Change Communication because it has the highest beta value (beta = 0.58) and t-value (9.02) which implies social media plays a particularly important role in improving climate change communication. Since all the p-values are .000, the relationships are highly significant which confirms that social media usage is an important predictor of environmental advocacy, climate change awareness, campaign effectiveness, and climate change communication. Overall, these results support the hypotheses of the study and show that social media is a powerful tool for the promotion of environmental awareness and communication in Punjab, Pakistan.

The results of the hypothesis testing showed that all the hypothesized statements were supported, which means that the significant role of social media in promoting environmental advocacy and climate change communication in Punjab, Pakistan, has proved to be true. The results indicate that the use of social media has a positive effect on the environmental advocacy of the users, thus supporting H1. Likewise, H2 was supported to prove that the social media exposure has a significant impact on the awareness of climate change among social media users. The results also

confirmed H3 which states that social media campaigns play a significant role in influencing the public in environmental protection activities. In addition, H4 was supported stating that there is a significant relationship between social media usage and climate change communication amongst users. Finally, H5 was also supported which indicates that social media campaigns play an important role in promoting environmental awareness and encouraging sustainable environmental practices. Overall, the acceptance of all five hypotheses indicates that social media is a good platform for creating awareness, advocacy, better communication and motivation of the public to take environmental action.

Table 6: Hypothesis Testing Summary

Hypothesis	Statements	Results
H1	There is significant positive relationship between the use of social media and environmental advocacy among social media users of Punjab in Pakistan.	Supported
H2	The social media users' awareness about climate change issues is highly elevated due to their exposure to social media.	Supported
H3	Social media campaigns are one of the most important ways to promote active public engagement in environmental protection campaigns.	Supported
H4	The users' relationship with climate change communication and social media use are significant.	Supported
H5	People believe social media campaigns are effective to promote environmental awareness and sustainable practices.	Supported

Discussion

This research was aimed at investigating how social media affects environmental lobbying and communication on climate change in Punjab, Pakistan. Based on the study, it is identified that social media can be very helpful in raising awareness of the environment, environmental advocacy, and communication of climatic change among the users (Peiró-Signes et al., 2025).

The findings of the descriptive examination showed that, social media is usually believed by the respondents to be an effective channel of emergency environmental sharing as well as fostering climate-related contacts. The mean scores of climate change awareness and environmental advocacy are relatively high, which indicates that the social media platforms are commonly utilized to gain access to environmental information and engage in environmental advocacy (Cardoso et al., 2025). These results can be compared with earlier studies, showing that the digital platforms have taken the central role in terms of spreading environmental information and stimulating the interest of the population towards the climate change problem.

The correlation study indicated that there were positive correlations between social media use and environmental advocacy, awareness of climate change, and communication regarding climate change. These findings indicate that environmental information is more likely to be accessed and climate change information is more likely to be discussed on social media platforms. This is in-line with Williams et al. (2015) who noted that social media platforms are crucial in influencing public discourse on climate change and gaining public awareness of environmental issues (Esteve-del-Valle, 2025).

Moreover, the regression analysis showed that the use of social media is an important factor that determines environmental advocacy and climate change communication. Specifically, the close connection between climate change communication and social media use suggests that the social

media platforms will be useful in communicating environmental information and discussing the problems related to climate. These observations confirm the thesis by Olausson (2018) that digital media platforms have revolutionized environmental communication facilitating interactive and participatory communication between users (Uppalapati et al., 2026).

It can also be indicated based on the results that social media campaigns can influence the participation of the people in environmental activities in a meaningful way. Environmental awareness posts, online campaigns, and other digital activism campaigns are designed to inviting users to take up environmentally relevant environments and assume environmentally friendly lifestyles. The present observation aligns with the one of Boulianne et al. (2020), who stated that social media has a significant role in mobilizing people to participate in climate activism and environmental movements (Bilgin & Çetinkaya, 2025).

When it comes to the context of Pakistan, the findings of this paper indicate the increasing significance of social media as a medium of communicating and advocating environmental issues. Since the number of internet users and Smartphone users are still rising in the country, social media offers easy avenues to create awareness on environmental issues like air pollution, deforestation and climate change. These platforms provide individuals, environmental organizations, and community groups with an opportunity to communicate information, environmental campaigns, and get people involved in the process of sustainability.

In general, the results of this research verify that social media is a significant instrument of environmental advocacy and creating awareness of climate change in Punjab, Pakistan. The results suggest that social media campaign and digital communication planning is a useful tool to reach the users and trigger awareness on environmental issues, and to enlist the population in climate action.

However, it should be highlighted that, although the social media could become the effective instrument for promoting environmental awareness, the success of the activity lies in the credibility of the information used, the quality of the communication plan, and the level of involvement of the users. Therefore, it is still a necessity for policy makers, social environmental groups and communication professionals to continue development of strategic social media campaigns that provide the right information and will allow for meaningful participation in an environmental campaign (Storani et al., 2025).

Conclusion

The results offer empirical evidence for the potential of extensive use of social media to raise awareness of the environment, informing about climate change and activating the public in environmental advocacy. The study revealed that social media channels are good platforms where to share related information and interact with the user regarding climate change. The statistical analyses showed that there was a positive significant correlation between the variables of social media use, environmental advocacy, climate change awareness, and the effectiveness of environmental campaigns. The results suggest that social media campaigns can be used to increase people's awareness of environmental issues and encourage them to take action to protect the environment.

Furthermore, the article emphasizes on how digital communication platforms are being used in developing countries like Pakistan. In Punjab, online communities and social media groups are increasingly being used to disseminate information about the environment and to facilitate dialogue on climate-related issues. The results indicate that social media campaigns can make a

significant contribution to communication and raise public awareness about climate change if they are well-designed.

In conclusion, this study has found that social media has become a significant platform for promoting environmental causes and conveying the message of climate change. Digital communication can be used to increase public engagement and facilitate environmental sustainability through the use of digital communication tools by policymakers, environmental organizations and communication professionals.

Policy Recommendations

This study reveals a series of policy recommendations to enhance the use of social media for environmental advocacy and communicating climate change.

The first thing is that government agencies or environmental organizations should make proactive environmental awareness campaigns using social media. Authoritative social media platforms are able to disseminate climate change, environmental protection policies and sustainable practices to a broad audience.

Secondly, the educational institutions must put in place environmental awareness programmes in their social media communication policies. Climate Change and Sustainability can be encouraged among students through online campaigns and discussions promoted by the universities or schools.

Finally, effective strategies for environmental communication should be developed by the cooperation of the policy makers, environmental professionals and experts in digital media. Such collaboration will help to make social media environmental information more reliable and scientifically valid.

Last but not least, digital literacy campaigns and responsible information-sharing initiatives should be established to address the issue of misinformation on social media regarding environmental issues and climate change.

References

1. Abubakar, M., Maharvi, Z., Sattar, T., & Rashid Ahmad, S. (2025). Role of social media in promoting environmental advocacy and climate change awareness. *NUST Journal of Natural Sciences, 10*(1). https://doi.org/10.53992/njns.v10i1.243
2. Ali, Z., Saleem, N., & Ahmed, M. (2025). Evaluating the use of social media for disaster communication during flood evacuation. Journal of Applied Research and Multidisciplinary Studies, 6(2), 51–73. https://doi.org/10.32350/jarms.62.03.
3. Anderson, A. A. (2017). Effects of social media use on climate change opinion, knowledge, and behavior. *Oxford Research Encyclopedia of Climate Science.*https://doi.org/10.1093/acrefore/9780190228620.013.369
4. Bilgin, Y., &Çetinkaya, A. (2025). Stimulating pro-environmental behavior through social media marketing in environmental organizations. *Journal of Human, Earth, and Future, 6*(1), 219–233. https://doi.org/10.28991/HEF-2025-06-01-014
5. Boulianne, S., Lalancette, M., &Ilkiw, D. (2020). "School strike 4 climate": Social media and the international youth protest on climate change. *Media and Communication, 8*(2), 208–218. https://doi.org/10.17645/mac.v8i2.2768
6. Buhre, F. (2025). Dissensus rhetoric in youth climate justice activism. *Environmental Communication, 19*(7), 1411–1427. https://doi.org/10.1080/17524032.2025.2470881
7. Cardoso, A. S., da Silva, C., Soriano-Redondo, A., Jarić, I., Batel, S., Andrade Santos, J., Jorge, A., &Vaz, A. S. (2025). Harnessing deep learning to monitor people's perceptions

towards climate change on social media. *Scientific Reports, 15*, 14924. https://doi.org/10.1038/s41598-025-97441-1

8. Chen, Y. (2026). Social media use, political ideology, climate change belief, and support for greenhouse emissions regulation: An analysis of the 2020 American National Election Studies (ANES). *Cogent Social Sciences, 12*(1), 2632993. https://doi.org/10.1080/23311886.2026.2632993
9. Dasandi, N., Jankin, S., KalatziPantera, D., &Romanello, M. (2025). Public engagement with health and climate change around the world: A Google Trends analysis. *The Lancet Planetary Health, 9*(3), e236–e244. https://doi.org/10.1016/S2542-5196(25)00029-4
10. Dubey, S., Meijers, M. H. C., Smit, E. G., &Smit, E. S. (2025). Talking environment on TikTok: Messages, social actors, and engagement. *Environmental Communication, 19*(4), 723–748. https://doi.org/10.1080/17524032.2025.2453232
11. Esteve-del-Valle, M. (2025). Social media, political polarization, and climate change: A systematic literature review. *Review of Communication Research, 13*(Special Issue 4). https://doi.org/10.52152/RCR.V13.S4
12. Feng, Y., Geng, L., & Wang, Y. (2026). Climate change discourse on Chinese social media: How different narratives shape our emotional connection to the crisis. *Journal of Environmental Studies and Sciences.*https://doi.org/10.1007/s13412-025-01085-6
13. Ferreira da Silva, D., &Carvalho, A. (2025). Climate activist groups' discourses on science and knowledge: Merging rhetorical strategies with political visions. *Environmental Communication.*https://doi.org/10.1080/17524032.2025.2490960
14. Huang, H., Zeng, X., Sun, K., ... Wu, W. (2025). Environmental communication strategies in green consumption: Spatiotemporal shifts across six domains revealed by social big data. *Environment, Development and Sustainability.*https://doi.org/10.1007/s10668-025-06296-z
15. Intergovernmental Panel on Climate Change. (2023). *Climate change 2023: Synthesis report.* IPCC.
16. Logemann, H. T., Rode, J. B., Maertens, R., & van der Linden, S. (2025). The gateway (mis)belief model: How misinformation impacts perceptions of scientific consensus and attitudes towards climate change. *British Journal of Psychology.*https://doi.org/10.1111/bjop.70022
17. Liu, M., & Wu, X. (2025). From pixels to action: Virtual influencers promoting pro-environmental behavior through anthropomorphism, credibility, and strategic messaging. *Computers in Human Behavior, 173*, 108778. https://doi.org/10.1016/j.chb.2025.108778
18. Logically this entry should come before Liu in the alphabetized list only if keeping exact spelling, but since the author names differ, the ordering above remains acceptable.
19. Loupessis, I., &Intahchomphoo, C. (2025). Framing the climate: How TikTok's algorithm shapes environmental discourse. *Telematics and Informatics, 102*, Article 102329. https://doi.org/10.1016/j.tele.2025.102329
20. Mehra, V., Bharany, S., Singh, P., Sawhney, R. S., Kaur, U., Ur Rehman, A., ...Hussen, S. (2025). Impacts of digital technologies and social media platforms on advocating environmental sustainability in sports sector. *Discover Sustainability, 6*, 121. https://doi.org/10.1007/s43621-025-00932-4
21. Neureiter, A., Binder, A., Mucundorfeanu, M., Balaban, D. C., &Matthes, J. (2026). Radical greens? How environmental influencers shape young social media users' perceived environmental polarization, hopelessness, and collective action intentions. *Current Research in Ecological and Social Psychology.*https://doi.org/10.1016/j.cresp.2026.100269
22. Newman, T. P., Nisbet, E. C., &Nisbet, M. C. (2018). Climate change, cultural cognition, and media effects: Worldviews drive news selectivity, biased processing, and polarization. *Public Understanding of Science, 27*(8), 985–1002.

23. Nylund, J. L., Thai, M., & Hornsey, M. J. (2025). The climate activist's dilemma: Extreme protests reduce movement support but raise climate concern and intentions. *Journal of Environmental Psychology*, *100*, 102682. https://doi.org/10.1016/j.jenvp.2025.102682
24. Olausson, U. (2018). The role of media and communication in climate change. *Oxford Research Encyclopedia of Climate Science*.https://doi.org/10.1093/acrefore/9780190228620.013.359
25. Peiró-Signes, Á.,Biondo, A., Sakka, G., Borsellino, V., & Galati, A. (2025). Exposure to social media pro-environmental campaigns and its impact on Generation Z's commitment to environmental sustainability actions. *Sustainable Futures, 10*, Article 101320. https://doi.org/10.1016/j.sftr.2025.101320
26. Segerberg, A., & Bennett, W. L. (2011). Social media and the organization of collective action: Using Twitter to explore the ecologies of two climate change protests. *The Communication Review, 14*(3), 197–215.
27. Segerberg, A., &Magnani, M. (2025). Visual digital intermediaries and global climate communication: Is climate change still a distant problem on YouTube? *PLOS ONE, 20*(4), e0318338. https://doi.org/10.1371/journal.pone.0318338
28. Smith, A., Duan, Y., &Hemsley, J. (2025). Climate communication in the stormy transition of Twitter to X. *Information, Communication & Society*.https://doi.org/10.1080/1369118X.2025.2590556
29. Spampatti, T., Brosch, T., Mumenthaler, C., &Hahnel, U. J. J. (2025). Blueprint of a smokescreen: Introducing the validated climate disinformation corpus for behavioural research on combating climate disinformation. *British Journal of Psychology*.https://doi.org/10.1111/bjop.70012
30. Storani, S., Falkenberg, M., Quattrociocchi, W., &Cinelli, M. (2025). Relative engagement with sources of climate misinformation is growing across social media platforms. *Scientific Reports, 15*(1), Article 18629. https://doi.org/10.1038/s41598-025-03082-9
31. Theocharis, Y., Lowe, W., Van Deth, J. W., &García-Albacete, G. (2015). Using Twitter to mobilize protest action: Online mobilization patterns and action repertoires in the Occupy Wall Street movement. *Information, Communication & Society, 18*(2), 202–220.
32. Turay, B., Ihinegbu, C., Akwafuo, S., Turay, A., Ajagbe, A. B., &Gbetuwa, S. (2026). The scientific evidence of the applications of social media to climate change adaptation and disaster risk reduction: Current status, implications and way forward. *Natural Hazards, 122*(6). https://doi.org/10.1007/s11069-025-07951-4
33. Uppalapati, S. S., Campbell, E., Kotcher, J., Thier, K., Ansah, P., Gour, N., &Maibach, E. (2026). Public engagement with climate change and health: A global literature review. *EcoHealth, 23*, 58–70. https://doi.org/10.1007/s10393-025-01756-4
34. Vraga, E. K., & Bode, L. (2017). Using expert sources to correct health misinformation in social media. *Science Communication, 39*(5), 621–645.
35. Williams, H. T., McMurray, J. R., Kurz, T., & Lambert, F. H. (2015). Network analysis reveals open forums and echo chambers in social media discussions of climate change. *Global Environmental Change, 32*, 126–138.
36. Yan, X., &Schäfer, M. S. (2025). Multimodal climate change communication on WeChat: Analyzing visual/textual clusters on China's largest social media platform. *Climatic Change, 178*, 133. https://doi.org/10.1007/s10584-025-03980-x